THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 38

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SHINSAKU TSURUMOTO,
HARUNOBU TATENO, MINEO GAMO,
SADAO KAKIZAWA, and KATSUJI KOBAYASHI

Appeal No. 1997-1379
Application 08/194,748[1]

ON BRIEF

Before HAIRSTON, BARRETT, and RUGGIERO, Administrative Patent Judges.

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[1] Application for patent filed February 10, 1994, entitled "Automatic Product Conveying System," which is a division of Application 08/023,856, filed February 24, 1993, now abandoned, which is a continuation of Application 07/776,227, filed November 13, 1991, now abandoned, which claims the filing benefit of PCT Application PCT/JP91/00287, filed March 4, 1991, and Japanese Application 02-62708, filed March 15, 1990.

BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 10, 11, and 19-22.

We reverse.

BACKGROUND

The disclosed invention is directed to a flexible manufacturing system that carries, loads, and unloads products between autonomous workstations and an autonomous warehouse. The system communicates the status associated with the carrying, loading, and unloading of the products so that collisions by the products as they move about the system are avoided.

Claim 19 is reproduced below.

> 19. A communication system for communicating between a movable unit and a fixed unit, said communication system comprising:
>
> a first signal transmitting and receiving system on the movable unit, transmitting status request signals and receiving status response signals;
>
> means, on the movable unit, for controlling movement of the movable unit responsive to the status response signals;

a status detector on the fixed unit, said status detector detecting status of the fixed unit;

a second transmitting and receiving system on the fixed unit, coupled to said status detector, receiving the status request signals and transmitting the status response signals responsive to the status request signals and as indicated by the status of the fixed unit, wherein the fixed unit comprising [sic] plural autonomous work stations and an autonomous product warehouse, and the movable unit comprising an autonomous carrier for conveying products between the work stations;

an annular conveyance path formed along the work stations with the carrier conveying products along the annular conveyance path;

autonomous station conveyor means disposed between the work stations and the conveyance path for conveying products from the work stations to the carrier or from the carrier to the work stations;

first control means for controlling the operation of the station conveyor means; and

autonomous buffer means disposed between the product warehouse and the conveyance path for the reception and delivery of products between the warehouse and the carrier,

wherein said first signal transmitting and receiving system comprising [sic] first communication means for the communication of loading and unloading status information of products between the carrier and the station conveyor means,

wherein said second signal transmitting and receiving system comprising [sic] second communication means for the communication of status information on the loading and unloading of products between the carrier and the buffer means,

wherein said status detector comprising [sic] first detector means for detecting the presence of product on the station conveyor means,

wherein said system further comprising [sic] second detector means for detecting the presence of product unloaded onto the station conveyor means from the carrier,

wherein said means for controlling comprising [sic] collision avoidance means for avoiding collision of products by preventing the unloading of products onto the station conveyor means by the carrier responsive to detection by said first detector means, and

wherein said first communication means comprises:

first and second light emitting elements provided on the carrier and producing an unloading request signal and a loading request signal, respectively;

first and second light sensing elements provided on the station conveyor means and receiving said unloading request signal and loading request signal, respectively;

a third light emitting element provided on the station conveyor means and producing an unloading OK signal in accordance with said unloading request signal when there is no product on the station conveyor means;

a fourth light emitting element provided on the station conveyor means and producing a loading OK signal in accordance with said loading request signal when the presence of product has been detected by the first detector means and the presence of unloaded product not detected by the second detector means; and

third and fourth light sensing elements provided on the carrier and receiving said unloading OK signals and loading OK signal, respectively.

The Examiner relies on the following prior art:

Meyer et al. (Meyer)	3,796,327	March 12, 1974
Scourtes	4,144,960	March 20, 1979
Shiomi et al. (Shiomi)	4,538,950	September 3, 1985
Anders et al. (Anders)	4,827,395	May 2, 1989
Nakamura et al. (Nakamura)	5,006,996	April 9, 1991 (filed March 20, 1989)
Raj	5,008,661	April 16, 1991 (filed January 4, 1989)

Claims 10, 11, and 19-22 stand rejected under 35 U.S.C. § 103 as being unpatentable over Raj, Nakamura, Anders, Shiomi, Meyer, and Scourtes.

We refer to the Final Rejection (Paper No. 31) and the Examiner's Answer (Paper No. 35) (pages referred to as "EA__") for a statement of the Examiner's position and to the Appeal Brief (Paper No. 34) (pages referred to as "Br__") and the Reply Brief (Paper No. 36) for Appellants' arguments thereagainst.

OPINION

Grouping of claims

The Examiner errs in finding (EA2) that the separate patentability of claims 20-22 has not been argued and, therefore, that these claims stand or fall together with claim 19. Appellants correctly note (RBr1) that the features of claims 20-22 are addressed at pages 14-15 of the Brief. Accordingly, the patentability of claims 20-22 must be addressed individually. Since the statement of the rejection in the Examiner's Answer is taken verbatim from the Final Rejection, which should have addressed all of the claims, we will not remand the case to the Examiner.

Obviousness

The Examiner bears the initial burden of establishing a prima facie case of obviousness. See In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). A prima facie case of obviousness is made by presenting evidence that the "reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the references before him to make the proposed substitution, combination or other modification." In re Lintner, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972);

In re Lalu, 747 F.2d 703, 705, 223 USPQ 1257, 1258 (Fed. Cir. 1984). It is incumbent on the Examiner to state how and why the teachings of the references would have been combined. "If examination at the initial stage does not produce a prima facie case of unpatentability, then without more the applicant is entitled to grant of the patent." In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

The Examiner has failed to establish a prima facie case of unpatentability for at least three reasons: (1) the rejection does not account for all the claim limitations; (2) the Examiner fails to explain completely how the references are combined to produce the claimed subject matter; and (3) the Examiner fails to provide motivation for the proposed combination.

(1)

All of the limitations in the claim must be addressed. See In re Wilder, 429 F.2d 447, 450, 166 USPQ 545, 548 (CCPA 1970) ("every limitation positively recited in a claim must be given effect in order to determine what subject matter that claim defines"); In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970) ("All words in a claim must be

considered in judging the patentability of that claim against the prior art.").

Claim 19 is a very detailed claim and the Examiner makes no effort to correlate the discussion of the references to the claim limitations, e.g., by a claim chart or by quoting relevant portions of the claim, or to account for all of the claim limitations. While the correspondence of some limitations to the references is clear without any specific mention by the Examiner, e.g., the buffer means of claim 20 can only be met by Scourtes, many other limitations are not accounted for in the combination. For example, the rejection does not address the "first detector means" and "second detector means" which cooperate with the "fourth light emitting element," as claimed. Nor does the rejection address where the references disclose or suggest the claimed "loading request signal," "unloading request signal," "unloading OK signal," and "loading OK signal." It is the Examiner's duty, not ours in the first instance, to show that all of the claim limitations have been addressed.

(2)

The Examiner does not completely explain how the references are proposed to be modified to produce the claimed subject matter. The Examiner combines general teachings of a communication system in Nakamura, Raj, and Anders with general teachings of a manufacturing system in Shiomi and Meyer and a workstation loading and unloading conveyor in Scourtes in some vague way without specifically describing how the teachings would be combined. This does not persuade us that one of ordinary skill in the art having the references before her or him, and using her or his own knowledge of the art, would have been put in possession of the claimed subject matter.

For example, the Examiner concludes (EA5): "It would have been obvious to provide Shiomi with the teachings of the communication system above [of Nakamura as modified by Raj and Anders]. Note that the communication systems and detecting means of similar design are provided at each station as taught by Shiomi and Meyer." This does not explain how Shiomi would be modified to provide the communication system of Nakamura, Raj, and Anders in place of that taught in Shiomi. This also does not explain how the teachings of Meyer are used in the combination; Meyer seems to be tacked on as an afterthought.

(3)

The Examiner generally does not provide any facts to show motivation, but merely concludes that various modifications would have been obvious. As recently stated by the Federal Circuit: "[T]he best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. . . . Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability--the essence of hindsight." In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999).

For example, the Examiner concludes that it would have been obvious "to have utilized a status device in the container (fixed device) of a system like Nakamura to send the status of the container in response to interrogation from a mobile interrogator in order to help the interrogator make informed decisions as suggested by Raj" (EA4). It is not clear exactly what claim limitation the Examiner is trying to

address unless it is the limitations of the "status request signals" and "status response signals" in the first and second transmitting and receiving systems. The Examiner does not explain why one of ordinary skill in the art would have been motivated to modify Nakamura to provide a status request/response since Nakamura is an inventory control system in an automatic warehouse which does not require such status signals.

The Examiner also concludes (EA5): "It would have been obvious to provide Shiomi with the teachings of the communication system above [of Nakamura as modified by Raj and Anders]." It is not explained why one of ordinary skill in the art would have been motivated to use the communication system of Nakamura, Raj, and Anders (assuming such combination would have been obvious) in place of the system in Shiomi. What advantage of the system in Nakamura as modified or disadvantage of the system of Shiomi would have led one skilled in the art to make a change?

We do not say that the Examiner's rejection is completely without basis. For example, Anders discloses that transmitting and receiving devices may communicate with

electromagnetic radiation, radio waves, and non-electromagnetic radiation, such as light and sound waves. This provides motivation for substituting a light communication system for an electromagnetic communication system. However, in general, the rejection fails to set forth factual support for motivation.

The Examiner states that the motivation may be based on knowledge generally available to those skilled in the art (EA7). This is true. However, the knowledge of those of ordinary skill in the art is normally demonstrated by a reference. See In re Kaplan, 789 F.2d 1574, 1580, 229 USPQ 678, 683 (Fed. Cir. 1986) ("Even if obviousness of the variation is predicated on the level of skill in the art, prior art evidence is needed to show what that level of skill was."). At a minimum, the Examiner is required to explain (i.e., make appropriate factual findings) as to what one skilled in the art would have known that would have provided the motivation. See In re Rouffet, 149 F.3d 1350, 1358, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998) ("[E]ven when the level of skill in the art is high, the Board must identify specifically the principle, known to one of ordinary skill,

that suggests the claimed combination."). Here, the Examiner has not identified what knowledge one of ordinary skill in the art would have had that would have motivated him or her to combine the references in the manner suggested by the rejection. Absent such evidence, we infer that the Examiner selected these references with the assistance of hindsight.

The Examiner further states that "an examiner's obviousness rejection which relies on a combination of references individually showing the various elements of a claimed invention without any express or implicit suggestion to do so is sufficient if it includes a convincing line of reasoning as to why an artisan would have found it obvious to choose the elements from the references to arrive at the claimed invention" (EA7-8). While a convincing line of reasoning is always necessary for an obviousness rejection, merely inventing a plausible explanation why a modification or combination would have been made is not sufficient. Obviousness is determined by an objective standard and must be based on evidence in the record, either in the prior art or in findings by the examiner, so that it can be reviewed. See Dembiczak, 175 F.3d at 999, 50 USPQ2d at 1617.

CONCLUSION

For the reasons discussed above, the rejection of claim 19 and dependent claims 10, 11, and 20-22 is reversed.

REVERSED

KENNETH W. HAIRSTON Administrative Patent Judge	)
LEE E. BARRETT Administrative Patent Judge	) BOARD OF PATENT APPEALS AND INTERFERENCES
JOSEPH F. RUGGIERO Administrative Patent Judge	)

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